

# STBK06I - STBK5G4

**V<sub>BR</sub> : 6.8 - 440 Volts**  
**P<sub>PK</sub> : 1500 Watts**

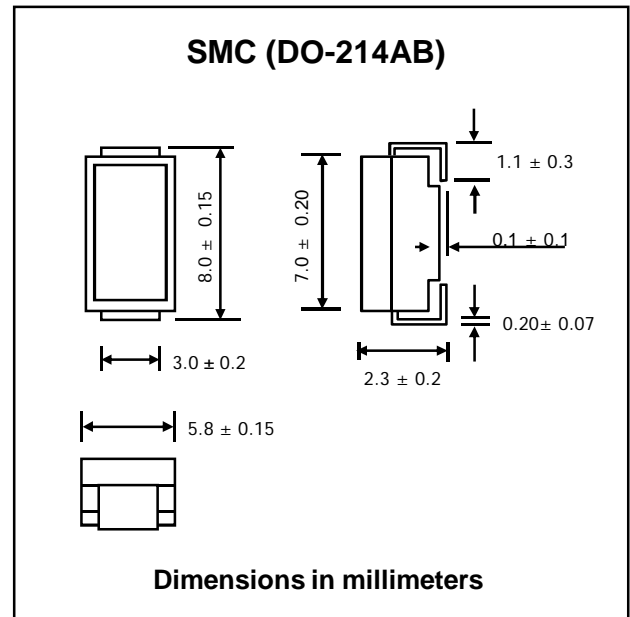
## FEATURES :

- \* Glass passivated junction chip
- \* 1500W surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time : typically less than 1.0 ps from 0 volt to V<sub>BR(min.)</sub>
- \* Typical I<sub>R</sub> less than 1µA above 10V
- \* **Pb / RoHS Free**

## MECHANICAL DATA

- \* Case : SMC Molded plastic
- \* Epoxy : UL94V-0 rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Polarity : Color band denotes cathode end except Bipolar.
- \* Mounting position : Any
- \* Weight : 0.21 grams

## SURFACE MOUNT BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR



## DEVICES FOR UNIPOLAR APPLICATIONS

For Uni-directional altered the third letter of type from "B" to be "U".  
Electrical characteristics apply in both directions

## MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P <sub>PK</sub>	Minimum 1500	W
Steady State Power Dissipation at T <sub>L</sub> = 75 °C	P <sub>D</sub>	5.0	W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C

### Note :

(1) Non-repetitive Current pulse, per Fig. 2 and derated above Ta = 25 °C per Fig. 1

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type No.	Breakdown Voltage @ $I_t$ ( Note 1 )			Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Leakage @ $V_{RWM}$ $I_R$	Maximum Reverse Current $I_{RSM}$	Maximum Clamping Voltage @ $I_{RSM}$ $V_{RSM}$	Maximum Temperature Co-efficient of $V_{BR}$ (% / °C)
	$V_{BR}$ (V)		$I_t$					
	Min.	Max.	(mA)	(V)	( $\mu$ A)	(A)	(V)	(% / °C)
STBK06I	6.12	7.48	10	5.50	2000	139	10.8	0.057
STBK56I	6.45	7.14	10	5.80	2000	143	10.5	0.057
STBK07F	6.75	8.25	10	6.05	1000	128	11.7	0.061
STBK57F	7.13	7.88	10	6.40	1000	132	11.3	0.061
STBK08C	7.38	9.02	10	6.63	400	120	12.5	0.065
STBK58C	7.79	8.61	10	7.02	400	124	12.1	0.065
STBK09B	8.19	10.0	1.0	7.37	100	109	13.8	0.068
STBK59B	8.65	9.6	1.0	7.78	100	112	13.4	0.068
STBK010	9.00	11.0	1.0	8.10	10	100	15.0	0.073
STBK510	9.50	10.5	1.0	8.55	10	103	14.5	0.073
STBK011	9.90	12.1	1.0	8.92	5.0	93.0	16.2	0.075
STBK511	10.5	11.6	1.0	9.40	5.0	96.0	15.6	0.075
STBK012	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078
STBK512	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
STBK013	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
STBK513	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
STBK015	13.5	16.5	1.0	12.1	1.0	68.0	22.0	0.084
STBK515	14.3	15.8	1.0	12.8	1.0	71.0	21.2	0.084
STBK016	14.4	17.6	1.0	12.9	1.0	64.0	23.5	0.086
STBK516	15.2	16.8	1.0	13.6	1.0	67.0	22.5	0.086
STBK018	16.2	19.8	1.0	14.5	1.0	56.5	26.5	0.088
STBK518	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.088
STBK020	18.0	22.0	1.0	16.2	1.0	51.5	29.1	0.090
STBK520	19.0	21.0	1.0	17.1	1.0	54.0	27.7	0.090
STBK022	19.8	24.2	1.0	17.8	1.0	47.0	31.9	0.092
STBK522	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
STBK024	21.6	26.4	1.0	19.4	1.0	43.0	34.7	0.094
STBK524	22.8	25.2	1.0	20.5	1.0	45.0	33.2	0.094
STBK027	24.3	29.7	1.0	21.8	1.0	38.5	39.1	0.096
STBK527	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
STBK030	27.0	33.0	1.0	24.3	1.0	34.5	43.5	0.097
STBK530	28.5	31.5	1.0	25.6	1.0	36.0	41.4	0.097
STBK033	29.7	36.3	1.0	26.8	1.0	31.5	47.7	0.098
STBK533	31.4	34.7	1.0	28.2	1.0	33.0	45.7	0.098
STBK036	32.4	39.6	1.0	29.1	1.0	29.0	52.0	0.099
STBK536	34.2	37.8	1.0	30.8	1.0	30.0	49.9	0.099
STBK039	35.1	42.9	1.0	31.6	1.0	26.5	56.4	0.100
STBK539	37.1	41.0	1.0	33.3	1.0	28.0	53.9	0.100
STBK043	38.7	47.3	1.0	34.8	1.0	24.0	61.9	0.101
STBK543	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101
STBK047	42.3	51.7	1.0	38.1	1.0	22.2	67.8	0.101
STBK547	44.7	49.4	1.0	40.2	1.0	23.2	64.8	0.101
STBK051	45.9	56.1	1.0	41.3	1.0	20.4	73.5	0.102
STBK551	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102
STBK056	50.4	61.6	1.0	45.4	1.0	18.6	80.5	0.103
STBK556	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type No.	Breakdown Voltage @ $I_t$ ( Note 1 )		Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Leakage @ $V_{RWM}$ $I_R$	Maximum Reverse Current $I_{RSM}$	Maximum Clamping Voltage @ $I_{RSM}$ $V_{RSM}$	Maximum Temperature Co-efficient of $V_{BR}$ (% / °C)	
	$V_{BR}$ (V)							$I_t$
	Min.	Max.	(mA)	(V)	( $\mu$ A)	(A)	(V)	(% / °C)
STBK062	55.8	68.2	1.0	50.2	1.0	16.9	89.0	0.104
STBK562	58.9	65.1	1.0	53.0	1.0	17.7	85.0	0.104
STBK068	61.2	74.8	1.0	55.1	1.0	15.3	98.0	0.104
STBK568	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104
STBK075	67.5	82.5	1.0	60.7	1.0	13.9	108	0.105
STBK575	71.3	78.8	1.0	64.1	1.0	14.6	103	0.105
STBK082	73.8	90.2	1.0	66.4	1.0	12.7	118	0.105
STBK582	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105
STBK091	81.9	100	1.0	73.7	1.0	11.4	131	0.106
STBK591	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106
STBK0B0	90.0	110	1.0	81.0	1.0	10.4	144	0.106
STBK5B0	95.0	105	1.0	85.5	1.0	11.0	137	0.106
STBK0B1	99.0	121	1.0	89.2	1.0	9.5	158	0.107
STBK5B1	105	116	1.0	94.0	1.0	9.9	152	0.107
STBK0B2	108	132	1.0	97.2	1.0	8.7	173	0.107
STBK5B2	114	126	1.0	102	1.0	9.1	165	0.107
STBK0B3	117	143	1.0	105	1.0	8.0	187	0.107
STBK5B3	124	137	1.0	111	1.0	8.4	179	0.107
STBK0B5	135	165	1.0	121	1.0	7.0	215	0.108
STBK5B5	143	158	1.0	128	1.0	7.2	207	0.108
STBK0B6	144	176	1.0	130	1.0	6.5	230	0.108
STBK5B6	152	168	1.0	136	1.0	6.8	219	0.108
STBK0B7	153	187	1.0	138	1.0	6.2	244	0.108
STBK5B7	162	179	1.0	145	1.0	6.4	234	0.108
STBK0B8	162	198	1.0	146	1.0	5.8	258	0.108
STBK5B8	171	189	1.0	154	1.0	6.1	246	0.108
STBK0D0	180	220	1.0	162	1.0	5.2	287	0.108
STBK5D0	190	210	1.0	171	1.0	5.5	274	0.108
STBK0D2	198	242	1.0	175	1.0	4.3	344	0.108
STBK5D2	209	231	1.0	185	1.0	4.6	328	0.108
STBK0D5	225	275	1.0	202	1.0	4.2	360	0.110
STBK5D5	237	263	1.0	214	1.0	4.4	344	0.110
STBK0E0	270	330	1.0	243	1.0	3.5	430	0.110
STBK5E0	285	315	1.0	256	1.0	3.6	414	0.110
STBK0E5	315	385	1.0	284	1.0	3.0	504	0.110
STBK5E5	332	368	1.0	300	1.0	3.1	482	0.110
STBK0G0	360	440	1.0	324	1.0	2.6	574	0.110
STBK5G0	380	420	1.0	342	1.0	2.7	548	0.110
STBK0G4	396	484	1.0	356	1.0	2.4	631	0.110
STBK5G4	418	462	1.0	376	1.0	2.5	602	0.110

**Notes:**

- (1)  $V_{BR}$  measured after  $I_t$  applied for 300  $\mu$ s.,  $I_t$  = square wave pulse or equivalent.
- (2) "STB" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( STBK06I - STBK5G4 )

FIG.1 - PULSE DERATING CURVE

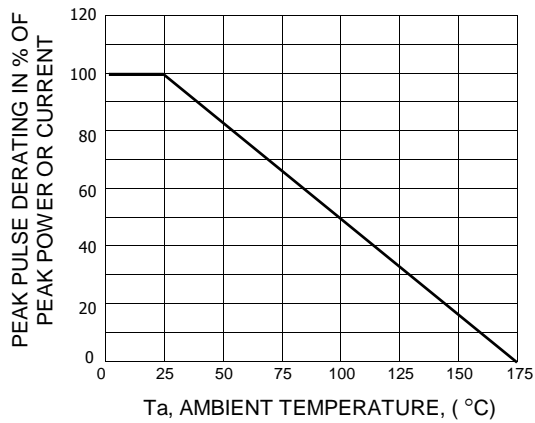


FIG.2 - PULSE WAVEFORM

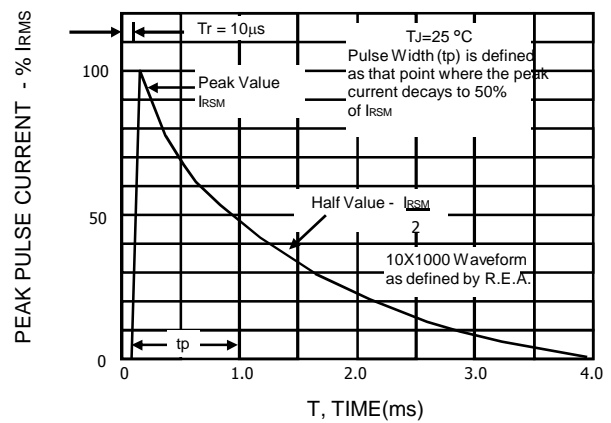


FIG.3 - STEADY STATE POWER DERATING

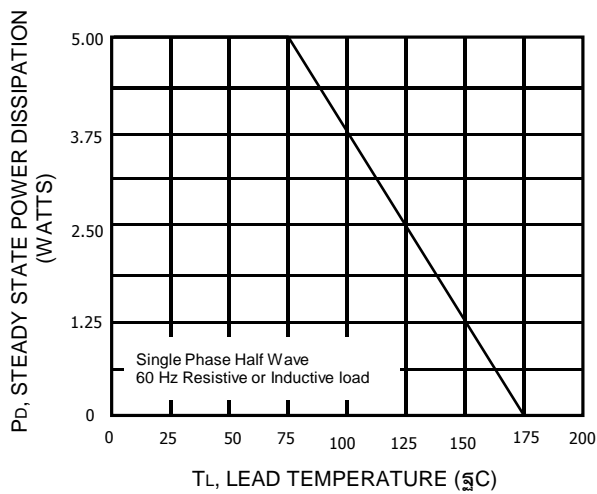


FIG.4 - PULSE RATING CURVE

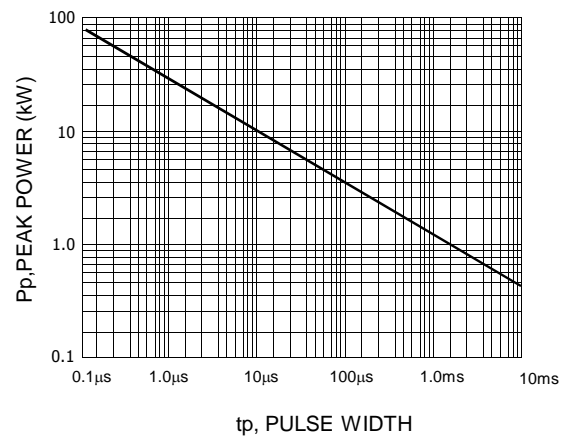


FIG.5 - TOTAL CAPACITANCE

